

# **Determining the Effect of Fire Barriers on the Combustion Behavior of Cored Composite Products using a Cone Calorimeter**

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NIST has developed a reduced-scale test ("Cube" test) that aims to capture the effects of fire barriers on the combustion behavior of multi-layered composite products including a core flammable material.

Interactions among the combustion of the components in the composite product make the prediction of real-scale performance based on single-component performance very challenging, if not infeasible.

The "Cube test" is a test designed to capture mass transfer and heat transfer phenomena in multi layered composite products.

On-going research is intended to quantify how better performing multi-layered composite products in the reduced-scale test (a lower likelihood of developing a pool-fire with its associated relatively large peak heat release rate) are related to the performance of the actual product when tested in full-scale.

Upholstery material/composites employed in residential upholstery furniture (RUF) will be used as a case study.